# THE SAFETY CLAUSE

DCMC'S FLIGHT OPERATIONS INTERNET NEWS LETTER, EDITION III
JULY 1997

We at Flight Ops are sure you've all been eagerly awaiting this, the third edition of the Safety Clause, with the same enthusiasm you normally reserve for root canals and those very special flight physicals that involve rubber gloves. Well, await no more. Sit back and enjoy, as magical safety waves emanate from your computer screen tattooing "SAFETY" on to your cerebral cortex. For those of you reading this from a mundane, low tech sheet of reconstituted, pulverized dead trees the magical safety waves may be somewhat less effective, so you should probably read this twice.

After reading the first two editions you may be beginning to form certain opinions concerning the kind of people in charge here at DCMC Flight Ops. To prevent this from happening we didn't write any of the articles this time. This edition contains articles written solely by our good friends at District East, who gladly volunteered to help us out. Thanks guys, and we were just kidding about the medical experiments. Your kids will be released soon.

As always we solicit inputs from the field. E-mail your article to john_heib@hq.dla.mil or milton_dillard@hq.dla.mil. Now, please direct your attention to the center ring. . .

## FYI

The Great Patch Contest. Is it just us or do we really need a new flight ops patch/logo; something to replace the flight ops "chicken patch" or the "brilliant demonstration of original thinking- DLA Logo" patch. All flight ops people are invited to work on this in their copious free time. Put some effort into it. We'll take Harvard Graphics, Power Point, Corel Draw, crayon on the back of a cocktail napkin, virtually any graphics format as your input. Some sort of vector graphic vs. a bitmap is preferred. The whiner, excuse us, winner will be duly rewarded. We're not sure how, but hopefully it will involve *LESS* punishment.

Risk Assessments. The latest version of the flight operations RA will soon be available for downloading on our web page. Of course, we're not calling them "Risk Assessments" anymore. It turns out some of the field personnel and contractors are beginning to understand the RA process and are getting used to the terms so we're changing both of them. We're aligning our survey/RA process with the DCMC Performance Based Assessment Model. If you understand the RA process you'll understand the PB Assessment process. If you can't, get your AMM to help you with the big words.

New Personnel. We have two new Flight Ops guys here at AQOI. Here are some short bios.

Representing the Navy will be LCDR Mark Conrad Feallock. "Fleabo" comes from the great state of Mississippi. He and his family, have found a place in Alexandria where they seem to be very happy despite Mark's brutal 12 minute commute each day.

A broadcasting major; after graduating from the University of Southern Mississippi, he was inspired by the Village People to "*Sale* the seven seas." Later, while at Pensacola attending Aviation Officer Candidate School, he was to discover the curriculum strangely stressed flying over selling. It was only after he became qualified in the HH-3A that Fleabo begin to understand the Navy's predilection for ocean operations over marketing. Nevertheless, he eventually was able to achieve his original ambitions while attending the Air Forces' Air Command and Staff College at Maxwell AFB, where he was able to sell the Mediterranean and Caribbean to a couple of unsuspecting Majors.

Most of Mark's flying background is in Boeing's tandem rotor H-46. This allows him to use the terms "tandem" and "counter-rotating," which seem to be personal favorites of his. He'll say, "If you hold those two jars in "tandem" and "counter-rotate" the lids you can open and close two jars simultaneously." We just nod and put away any sharp objects that were within his reach. He will be replacing CMDR Kevin "of Arabia" Holland, as our Navy rep. So if you have Navy specific questions he's the one to call; just don't get him started on the advantages of owning your very own "tandem" oceans and "counter-rotating" seas.

On the Army side we finally have our replacement for Lt Col Beth Marchman who left, what, two years ago? Worth the wait is Major Andrew "Huah!" Chappell. He's from Georgia, so if you knew New Yorker Beth you'll probably notice a slight difference in their accents. Like Fleabo, Andy is an OCS grad and rotor wing type. Even though he's a certified acquisition guy he still found the time to get qualified in UH-1's, Cobras and Blackhawks, and as our new POC for UAV operations he says he's anxious to get back in the flying game by taking a few test flights in them to "get a feel" for the unique nature of UAVs.

Andy recently left Ft. Monmoth where he was putting in 16-hour days as a General's Executive Officer. Now that he's here he can sleep-in a little with our relaxed 15-hour day schedule. He and his family, are building a house in Manassas; a town that's considered a cut above the rest, what with Lorena Bobbitt living there and all. This is the first house they've ever built and he's hoping Rogaine will help him re-grow the hair he's pulling out each time they visit the construction site.

Anyway, if the term "Huah!" is music to your ears and you have an Army specific question you won't have to ask us Air Force and Navy types anymore, just call Andy, but whatever you do, don't tell him what UAV stands for.

v/r Lt Col John Heib, john_heib@hq.dla.mil

## AMM NEWS

Greetings once again AMM/APT members out there in the flight ops world. Since our last issue the National Aerospace FOD Prevention Inc., Conference was held in Seattle. There were many representatives from the Aerospace industry as well as the military and DCMC on hand this year. There was a lot of discussion about the cancellation of Mil-Std-980 and the need for an industry standard to ensure FOD free work environments.

The NAFPI FOD Prevention Guideline is considered by the Aerospace industry as the way to go to maintain a solid FOD and Tool

control program. AMMs throughout DCMC have been tracking this document from day one, and have found it to be an excellent guideline on FOD prevention that mirrors Mil-Std-980 requirements in all areas. After the 1996 FOD conference AQOI began to work with other agencies, such as AIA, about adopting the FOD Prevention Industry guideline as an industry standard. While at the conference we learned that the FAA has sent out a Advisory Circular adopting the NAFPI FOD Prevention guideline for FOD. We are finally starting to see some results from the hard work of our Aviation Maintenance Managers on this issue.

Special thanks to SMSgt Chuck Ahrens at DCMC Boeing Seattle. He did an outstanding job in support of the briefings and Interactive Learning Sessions given by DCMC at the conference.

AMM COURSE UPDATE. AQOI will sponsor a Instructor Development class at DCPSO in Columbus Ohio. The class is scheduled for 8-12 September. New instructors for the AMM, GFR, and Aircraft Ground Safety courses will receive training. Our next AMM course offering is scheduled for 20-24 Oct at DCMC McDonnell-Douglas St. Louis, MO. For anyone who would like to attend our course contact your district AMM CMSgt Penman for the West District at (310) 335-3673, DSN 972-3673, Mike Lathrop for the East District at (617) 753-4078, DSN 955-4078, and SMSgt Mark Baumbusch for District International at (703) 767-2494, DSN 427-2494.

v/r MSgt Milton Dillard, milton_dillard @hq.dla.mil

## Latest and Greatest Comments from The Field.

Our first article was written by Mike Lathrop, DCMDE's Aviation Maintenance Manager. His message to you is, 'If you think those big ugly tripod looking things over there in the corner don't have anything to do with flight ops-'

## "YOU DON'T KNOW JACK!"

They come in a variety of shapes and sizes. From small axle jacks to massive tripod wing jacks, all designed to perform the same basic function: to safely lift something heavy up and down with little effort on the operator's part.

Sounds real simple doesn't it.

Well then, why, over the years have numerous mishaps occurred and what were some of the apparent causes?

Lets talk about causes first.

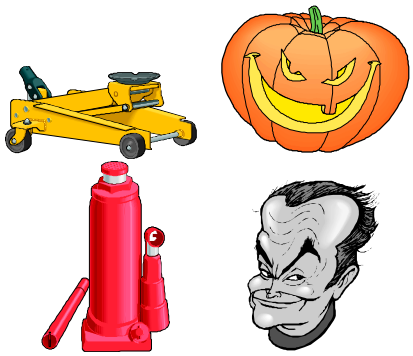
Encounters with work stands, and various types of support equipment during jacking operations account for a large percentage of incidents. Axle-type jack incidents (i.e., jacks failing under load or jacks tipping and slipping off jack points) additionally account for numerous incidents. Damage resulting from these incidents usually involves landing gear doors or adjacent structures. Major damage has been inflicted by jack rams literally puncturing through fuselage structures or through wing assemblies by aircraft falling off their jacks.

The following are typical mishap causes:

Equipment Failure- Jacks failing to initially lift loads or rapid ram retraction (collapse) due to sudden loss of hydraulic pressure.

These are probably the two most common jack failures one will encounter.

Impending structural component failure (i.e., leg assemblies, support cross-members, etc.) evidenced by signs of bowing, twisting or cracking of the component. Common causes of these occurrences are usually attributed to missing, loose, or incorrect attaching hardware (i.e., nuts, bolts, etc.) installed or simply allowing material deterioration (rust) to eventually render the jack unsafe for use.



*These Jacks are not usually certified to lift aircraft.*

Complacency- Defined as, "self satisfaction accomplished by unawareness of actual dangers or deficiencies". Rough interpretation- "Hurry up and just shove them under the plane, close the bypass valve, and pump the handle. Right?

Wrong!

One of the best ways to eliminate the negative effects of complacency is by performing pre-operational (prior to use) inspections. This inspection is performed by the user and designed to verify an item is properly serviced and ready for use. The following elements should be verified: lifting capacity, proper functioning of safety locks, general condition, and serviceability of the equipment.

Improper Use- Using the wrong jack for the job (e.g., using a 1 ton axle jack where a 5 ton jack is required) or jacking an aircraft from an unauthorized jacking point (e.g., jacking a C-130 main gear utilizing the center of the drag strut as a jack point!).

Improper Installation- Not properly seating jacks prior to lifting the aircraft (especially tripod jacks). Wrong or poorly positioned attaching components (jack pads) or extending the threaded center adjustment rod beyond safe stability limits, which, by the way, shouldn't happen if the jack was adequately inspected for serviceability prior to use in the first place.

It doesn't matter what size the jack is or even the frequency of its use, the risk of equipment failure can be significantly reduced by having an ongoing and comprehensive preventive maintenance program. A minimal, acceptable preventive maintenance program should consist of the following functions: inspecting, servicing, lubricating, adjusting, replacing parts and a qualification/training program for personnel operating this equipment.

The next time you perform surveillance of a jacking operation, take special note for the following:

(1) Are the right jacks being used for the job?

(2) Have the jacks been pre-operationally inspected?

(3) Are the jacks installed and seated properly?

(4) Are qualified personnel being used to perform this jacking operation?

That's the story on aircraft jacking, a hazardous but never the less manageable process. Here now are the Top Ten Complaints from Supervisors on Aircraft Jacking:

1. Seems like every time you jack up the aircraft, you end up kicking the hubcap and scattering the lug nuts to the four winds.
2. The FBI hauled away the training guy because they thought he was teaching "Hi" jacking.
3. Can't use a two by four and a rock to jack the aircraft even if you paint them yellow and put on an inspection tag.
4. Even if you played jacks as a kid you still have to go through the training all over again to do *aircraft* jacking.
5. You drop just one billion dollar aircraft off its jacks and your branded for life.
6. After you rope off the aircraft, put up all the warning signs, pre-brief the operation and finally jack up the aircraft, you discover your spare tire is flat.
7. Flight ops guys always borrowing the jacks to prop up their egos.
8. During breaks, the mechanics put walnuts under the aircraft and lower the jacks to crack'em.
9. The last time the aircraft was left overnight up on the jacks, the wheels were missing the next morning.
10. Aircrafts is heavy!

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We at AQOI, have always enthusiastically recommended APT member attendance at the annual conferences on FOD. LT Ken Boben, USN, our man at Northrop Grumman St. Augustine, was inspired enough by the last FOD conference that he wrote the following article.

## FODless in Seattle

**FOD** means Foreign Object Damage or Foreign Object Debris. Those of us in military aviation have had the message of FOD, its prevention and hazards, driven into our heads since our initial ground flight training. It is not some obscure threat. It can cost each of us our lives. The challenge in the aircraft contractor environment is to educate the manufacturing workforce regarding the threat that FOD poses to their product and those who fly it.

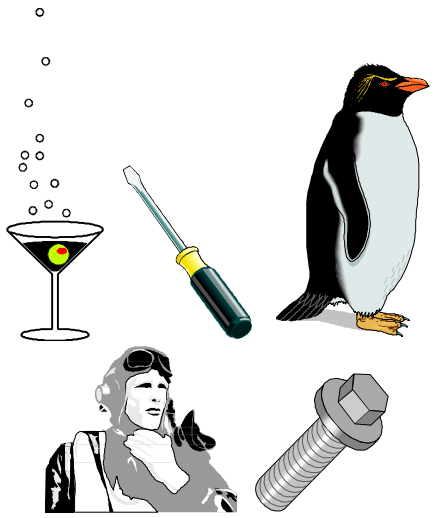
Changing aircraft mechanics' work habits is not easy or immediate in any of aircraft manufacturing organization. Most FOD prevention programs began after some initial crisis (e.g., management became concerned when an expensive engine was destroyed or a prototype vehicle was lost). Response to crisis reflects the character and vision of organizations. Lest we forget the warning of George Santayana, "Those who cannot remember the past are condemned to repeat it." Those companies that shrug off a mishap as an act of fate or a one time occurrence are destined to repeat their mistakes, and every time history repeats itself the price keeps going up. Conversely, those companies that aggressively learn from their mistake and pursue excellence rise above the competition.

During the recent National Aerospace FOD Prevention Conference (NAFPI) in Seattle, several common themes were expressed by organizations with proactive FOD prevention programs. All of these themes supported the NAFPI FOD Prevention Formula for Success:

*Awareness + Prevention = Compliance*

Awareness. If a single goal could be identified for all the industry leaders it would be: "Create a culture that hates FOD." Creating awareness through training is the first step.

Training. Educating through regularly scheduled training on FOD prevention raises awareness. Formal training can vary in frequency from quarterly to annually. All employees should receive the training. Even engineering and administrative personnel walk through the facility on routine business. It could easily be one of those employees who finds the FOD that saves an aircraft or engine. This can also raise the morale of those on the production floor to see that stopping FOD is really a total workforce effort.



*Five most common objects inadvertently left inside aircraft engines.*

Management Commitment. Successful organizations take FOD prevention very seriously from the CEO down. Desire to become "the industry leader in FOD prevention" is a common theme that executives express openly in front of their people. What stronger message could be sent?

Management commitment also includes the commitment of resources. Committing the funds and personnel to develop a total program, including procedures, controls and recognition, makes a clear statement to the entire workforce of the importance of FOD prevention.

Workforce Commitment. Developing the commitment of personnel on the floor is a tremendous challenge. Obvious enthusiasm for FOD prevention is evident in organizations that develop their programs from the shop floor. This creates true ownership of the process and great pride from the guys and gals who develop the programs and implement them throughout their facilities. Employee teams that have done this remarked on the increase in morale and the effectiveness of peer pressure in swaying non-believers. There is another advantage with employee developed programs; that is, "*personal responsibility in the success of the program*." The greatest programs developed from upper management and cast upon the workforce are sometimes seen as a burden by employees and are usually poorly implemented without any enthusiasm for the cause.

Recognition of Excellence. Most organizations start out recognizing excellence from a committee. Many later found greater effectiveness in a peer recognition system. Peer recognition seemed to be more effective and meaningful when coming spontaneously from a coworker as opposed to predictable monthly awards. Small award pins[1] were used as a starting point for employees new to the program. As greater enthusiasm and

[1] Just make sure the buttons/pins don't become another FOD source!

compliance are observed, the awards can be increased a notch: coffee cups, jackets, etc.

FOD Champions throughout the facility. The message of FOD prevention must be reaffirmed daily. Managers, supervisors, and enthusiastic shop personnel must lead the charge. Reminding personnel to clean as they go and recognizing the efforts of individuals are keystones to the success of a good FOD program. Without these vocal proponents of the program acting as cheerleaders, the message will die. Senior management must fully support the program every time they are on the factory floor. Leading by example can be as simple as wearing anti-FOD buttons or pins. What is important to senior managers will be important to supervisors and to the workforce.

Banners and Signs. The message of FOD prevention must be inescapable. Employees should see large banners and signs in every direction proclaiming the risk associated with FOD. ARFF vehicles, runway sweepers and golf carts can have large anti-FOD stickers displayed to raise awareness. Awards also play a part in awareness. When you have people drinking from their FOD free coffee cups, wearing FOD free baseball caps and FOD free jackets, the message permeates the culture. Remember the idea is to create a culture that hates FOD.

## Prevention

Tool Control. The prevailing trend is toward company owned and supplied tools. More important is the absolute control of tools used in the production and maintenance of aircraft, no matter who owns them. FOD-free tool control areas can be delineated with signs and floor striping. When a tool is lost, it must be reported immediately without any negative impact to the employee. Employees should be praised for immediate notification of lost tools. All work should stop until the tool is found. Most companies require a senior manager to concur that all efforts have been exhausted prior to returning an aircraft or assembly for continued work if the tool was not found.

Good Housekeeping. More than just a magazine, it's a way of life. Poor housekeeping gives the impression of sloppy workmanship. Organizations striving to be industry leaders understand the correlation between good housekeeping and the attitudes of their employees, insisting on "Clean as You Go." After the completion of tasks, and certainly at the end of each shift, the facility should be swept clean. All areas in the production facility should be defined and individuals assigned responsibility to clean according to posted schedules.

Inspections. Inspect, Inspect, Inspect. Whenever QA or an inter-station transfer inspection finds FOD, the exact location of the FOD must be reported to the supervisor and the entire team. The idea is to learn from the findings. Was someone forgetful? Can the process or tooling be improved? Companies can take great pride in supplying sub-assemblies and aircraft FOD free throughout production to delivery. It becomes a matter of embracing an attitude of "FOD is unacceptable" as opposed to "some FOD will always be there." There are companies on each side of this philosophy. I know which plane I would rather fly.

FOD Sweeps. Unannounced, random inspections of workstations by managers, QA, supervisors and DCMC is another important ingredient in a healthy FOD diet.

Having representatives from all areas involved in administering the FOD program reduces finger pointing if a problem is exposed. An inclusive approach also offers exposure to how others in the organization are doing in the fight against FOD.

FOD Walk-downs. Most companies use sweepers to vacuum ramps and run ways, but others are now taking the extra step of conducting FOD walk-downs on a daily basis. This is encouraging. It is a large investment of time and money and reflects well on a company that takes FOD seriously. Remember, these are companies looking to be industry leaders in FOD prevention.

Pilot Walk and Talks. Pride and ownership. In commercial aircraft, it would be easy to get an employee to fight FOD by asking if they themselves want to fly on an aircraft with missing tools, or have a son or daughter on that aircraft. You would expect everyone to say no. In military aircraft production the challenge is a little different. Not everyone knows a pilot or crewmember personally, but they can through pilot walk and talks. This can be formal or informal. Walking the plant and introducing yourself to workers, asking questions about production. Putting a face and name to the person who will use their aircraft, knowing that that person's life depends on their work can have a profound effect. You also get to meet some great folks.

Overall, most of this is not new. The enthusiasm that some companies display in the effort to create a culture that hates FOD sets them apart from the rest. The companies that are leading the effort to eliminate FOD should be applauded and copied. This is happening today through the use of benchmarking. Companies are looking at others in the aerospace industry and other industries to see what works. The challenges may not be all that different. It's an important lesson for all - look beyond our small worlds and learn from those doing it well. What is your company doing to prevent FOD? Let us know.

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To finish off this news letter, here are some words of wisdom from Lt Col Mike Clover, DCMDE's CFO. He sent this out to the field but its applicability is universal, and so, we're reproducing his comments for your edification.

## MISHAPS IN A NUTSHELL

A recent incident brought to light several important issues -- basic definitions and mishap notification requirements. Though we've all undergone training, there still appears to be some confusion over the term "aircraft" and when to report an incident. According to DFARS 252.228-7001, the Ground and Flight Risk Clause (GFRC), an "aircraft" refers to:

(1) Aircraft to be delivered to the Government under a contract (either before or after Government acceptance), including complete aircraft and aircraft in the process of being manufactured, disassembled, or reassembled, provided that an engine, portion of a wing or a wing is attached to a fuselage of the aircraft and

(2) Aircraft, whether in a state of disassembly or reassembly, furnished by the Government to the Contractor under a contract, including all property installed, in the process of installation, or temporarily removed, provided that the aircraft and

property are not covered by a separate bailment agreement.

In essence, an
"aircraft" = engine + fuselage + wing.

More importantly, if any contract includes the GFRC, then the Government assumes the risk of damage, loss, or destruction of an "aircraft" while its in the open, during operation, or in flight.

That's half the battle. Now combine these basic concepts with DLAI 8200.4's Mishap Notification and Investigation Procedures for Aircraft Flight, Aircraft Flight-Related, and Aircraft Ground mishaps and you've spelled out WHEN to report an incident. The key here is to notify the appropriate ACO, PCO, District and AQOI whenever any damage occurs to an aircraft.

BOTTOMLINE: It is far better to "report" an incident and later discover the cost factors made the incident NONREPORTBLE than to have said nothing at all.

It's a tough job being the messenger of bad news, but as professional aviators and safety specialists it comes with the territory. Remember: Prevention results from communication and education.

The recent rash of mishaps throughout the District have one common trend -- Human Factors. As the June issue of FLYING SAFETY magazine points out, "At the outset it is important to accept the inevitability of human error. No person, whether designer, engineer, manager or pilot, will perform perfectly at all times. But we must keep trying anyway!" As "tips of the spear," you must help us reverse this tide of human errors.

Take time now to review your contractor's Procedures and validate them in action. Often times the "written word" is ignored in the haste to keep production moving. However, these are the times when Government people and equipment are at their greatest risk.

My Flight Teams (OAF @ 617-753-3394/4209/4078) and Specialized Safety (OAS @ 617-753-3154/3396) stand ready to assist you with any questions or concerns. Don't hesitate in calling.

As always, FLY SAFE and FLY SMART!

Lt Col Mike Clover
Chief, Flight Operations, Specialized Safety